

Claims

1. A method for in vitro production of bone tissue, comprising the steps of:
 - (a) applying undifferentiated mammalian cells on a substrate;
 - (b) directly contacting said cells with a culture medium for a sufficient time to
5 produce a continuous mineralised or non-mineralised matrix having a thickness of at least 0.5 μm ;
 - (c) removing the substrate with the matrix from the culture medium.
2. A method according to claim 1, wherein said undifferentiated mammalian cells are bone marrow cells, especially stromal cells.
- 10 3. A method according to claim 1, wherein in said cells are autologous cells.
4. A method according to claim 1, wherein in step (a) the cells are applied at a rate of 10^3 to 10^6 cells per cm^2 .
5. A method according to claim 1, wherein the culture medium used in step (b) is a conditioned liquid culture medium.
- 15 6. A method according to claim 5, wherein the culture medium used in step (b) is conditioned by prior exposure to viable marrow cells.
7. A method according to claim 1, wherein in step (b) the cells are contacted with the culture medium until a matrix layer of 1-100 μm , in particular of 10-50 μm has been produced.
- 20 8. A method according to claim 1, wherein in step (b) the cells are contacted with the culture medium for at least 2 weeks.
9. A method according to claim 1, for the provision of load-bearing implants, joint prostheses, maxillofacial implants or special surgery devices.

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